



AVOX Systems

895 Series Composite Cylinder and Regulator Assemblies



AVOX Systems



WARNING

IMPROPER USE OR IMPROPER MAINTENANCE OF THIS EQUIPMENT MAY RESULT IN SERIOUS INJURY OR DEATH. THESE ASSEMBLIES ARE INTENDED TO BE USED ONLY FOR AVIATION APPLICATIONS AS COMPONENTS OF A COMPLETE AVIATION OXYGEN SYSTEM USED ONLY BY, OR UNDER THE SUPERVISION OF, A PILOT OR CREW MEMBER TRAINED AND QUALIFIED IN ITS USE.

THIS EQUIPMENT IS TO BE SERVICED ONLY IN ACCORDANCE WITH THE APPLICABLE COMPONENT MAINTENANCE MANUAL AVAILABLE FROM AVOX SYSTEMS AND APPLICABLE

DEPARTMENT OF TRANSPORTATION (DOT) REGULATIONS AND ONLY BY SERVICE TECHNICIANS TRAINED IN THE INHERENT HAZARDS OF HIGH PRESSURE AVIATION OXYGEN AND KNOWLEDGEABLE IN THIS EQUIPMENT. THE NAMES OF AUTHORIZED SERVICE CENTERS ARE AVAILABLE FROM AVOX SYSTEMS OR YOUR AUTHORIZED AVOX SYSTEMS DISTRIBUTOR. THIS EQUIPMENT SHALL BE USED ONLY WITH AVIATION BREATHING OXYGEN MEETING THE REQUIREMENTS OF MIL-PRF-27210.

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Assemblies
Cylinder, Regulator, Valve

895 Series Composite Cylinder and Regulator Assemblies



Designed for aviation use, the AVOX Systems 895 Series Composite Cylinder and Regulator Assemblies feature a thin-wall aluminum alloy cylinder wrapped with Kevlar and sealed in epoxy. Use of these composite materials creates a cylinder that weighs approximately 50% less than conventional steel cylinders.

The cylinder mounted regulator is available as either a push-pull lever or handknob actuated type. Both are identical in performance to similar models in use worldwide. The regulator functions as an on/off valve as well as a pressure reducer and is designed for long-term reliability and minimum maintenance.

The 895 Series is available in various configurations permitting remote operation and custom installation, and is usable at service pressures to 1850 psig.



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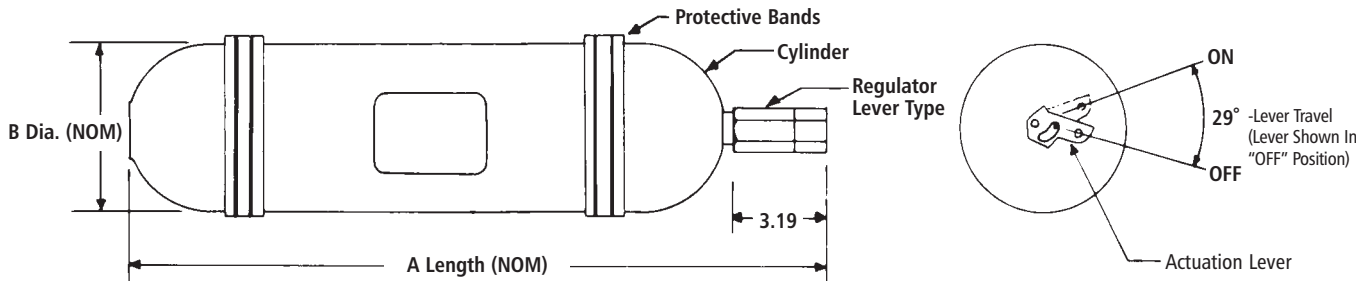
The main feature of this system is the lightweight "composite" cylinder. A thin-wall, seamless aluminum alloy cylinder (6061T6) is reinforced by a full overwrapping of Kevlar fiber sealed in epoxy.

The composite construction produces an approximate 50% reduction in weight when compared to steel cylinders in current fixed aircraft oxygen systems. The cylinder conforms to D.O.T. regulations.

There are some differences in length and diameter between steel cylinders and the 895 Series, but the main difference is in the neck diameter and the use of 750-16 UNF-2A straight thread instead of the conventional pipe-thread used in steel cylinders. The sealing of the regulator to the cylinder is accomplished with a boss seal.

Protective elastic bands are field adjustable and provide protection against vibration chafing at the clamps.

Some models utilize an oxygen efficient, altitude-compensated regulator in which an aneroid senses cabin altitude variations to regulate outlet pressure. The combined regulator and high-pressure shut-off facilitates service and replacement. Current D.O.T. regulations provide for a 15-year cylinder service life.



TO ORDER THE COMPLETE 895 SERIES CYLINDER AND LEVER TYPE REGULATOR ASSEMBLIES, COMPLETE THE BUILDING BLOCK NUMBERS.

BASIC SERIES NUMBER 895 –

Regulator Assembly						Cylinder Finish (Paint)		Composite Lightweight Cylinder																														
No.	Outlet Press. Range (PSIG)	Inlet Press. Range (PSIG)	Regulated Flow Range (LPM)	Part Number	△ 4 Wt. (Lbs.)	No.	Description	No.	Cyl. Cap. △ 1 (Cu. Ft.)	Part Number	Dim. A (In.)	Dim. B (In.)	Weight (Lbs.) Min.	△ 2 △ 4 Max.	Elastic Protective Band																							
															Part Number	Wt.(lbs.)△ 4																						
01	80-55	250-1850	5-200	803213-01	1.50	0	Green No. 14187 Fed Std - 595 Polyurethane Coating	22	22.8	21507-01	22.8	5.1	5.19	5.89	31062-022	.17																						
02	80-55	250-1850	5-200	803215-01	1.66			40	40.0	21507-05	23.3	6.7	8.82	10.12	31062-050	.19																						
03	80-55	250-1850	5-200	803214-01	1.31			50	50.1	21507-02	27.9	6.7	10.87	12.07	31062-050	.19																						
04	80-55	250-1850	5-200	803214-02	1.56			77	77.1	21507-03	32.5	7.5	17.81	19.31	31062-077	.22																						
05	80-55	250-1850	5-200	803213-02	1.56			15	115.7	21507-04	34.5	8.9	26.22	28.22	31062-115	.24																						
06	80-55	250-1850	5-200	803213-03	1.56																																	
07	68-42	200-1850	2-70	803213-05	1.50	Regulator with Altitude Compensated Regulation Attached <table><tr><th rowspan="2">Altitude (Feet)</th><th colspan="2">Flow Capacity (LPM-NTPD)</th><th rowspan="2">Regulated Outlet Pressure (PSIA) △ 3</th></tr><tr><th>Low</th><th>High</th></tr><tr><td>8,000</td><td>15.0</td><td>15.0</td><td>24.1 - 32.1</td></tr><tr><td>12,500</td><td>18.0</td><td>24.0</td><td>32.3 - 39.8</td></tr><tr><td>20,000</td><td>40.0</td><td>48.0</td><td>49.2 - 58.7</td></tr><tr><td>35,000</td><td>76.0</td><td>85.0</td><td>72.8 - 84.8</td></tr></table>											Altitude (Feet)	Flow Capacity (LPM-NTPD)		Regulated Outlet Pressure (PSIA) △ 3	Low	High	8,000	15.0	15.0	24.1 - 32.1	12,500	18.0	24.0	32.3 - 39.8	20,000	40.0	48.0	49.2 - 58.7	35,000	76.0	85.0	72.8 - 84.8
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8,000	15.0	15.0	24.1 - 32.1																																			
12,500	18.0	24.0	32.3 - 39.8																																			
20,000	40.0	48.0	49.2 - 58.7																																			
35,000	76.0	85.0	72.8 - 84.8																																			
08	△ 3	100-135	△ 3	803216-03	2.04																																	
09	68-42	200-1850	2-70	803214-03	1.56																																	
10	△ 3	100-135	△ 3	803216-04	2.25																																	
11	80-55	250-1850	5-200	803213-04	1.55																																	
12	135-100	200-1900	10-100	803216-01	1.31																																	
13	135-100	200-1900	10-100	803216-02	1.52																																	
14	135-100	200-1900	10-100	803216-05	1.39																																	
15	135-100	200-1900	10-100	803216-06	1.60																																	
16	△ 3	100-135	△ 3	803216-07	2.12																																	
17	△ 3	100-135	△ 3	803216-08	2.33																																	
18	80-55	250-1850	5-200	803213-06	1.93																																	
19	80-55	250-1850	5-200	803213-07	1.56																																	
20	80-55	250-1850	5-200	803215-03	1.68																																	
21	80-55	250-1850	5-200	803213-08	1.62																																	
22	80-55	250-1850	5-200	803215-04	1.66																																	
23	80-55	250-1850	5-200	803214-21	1.31																																	
24	80-55	250-1850	5-200	803214-22	1.56																																	
25	80-55	250-1850	5-200	803213-19	1.93																																	
26	80-55	250-1850	5-200	803213-20	1.54																																	

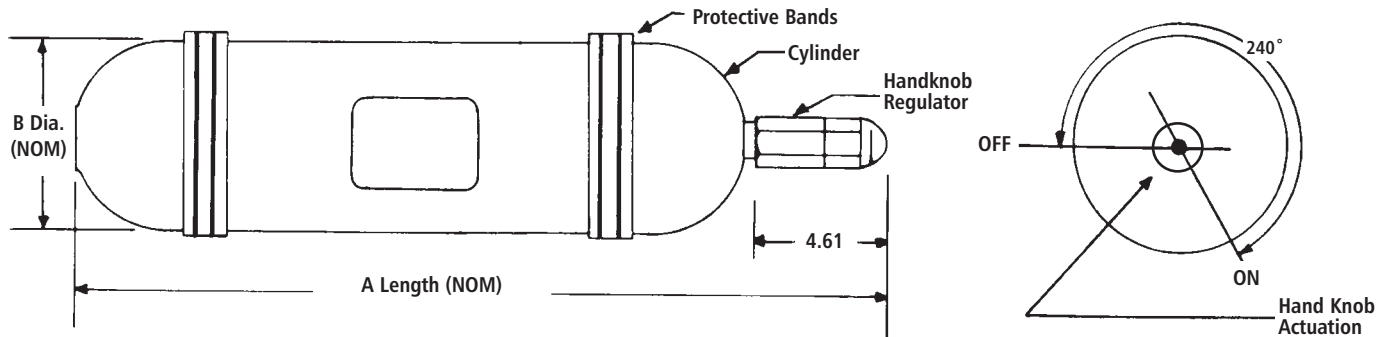
△
1 Volume of oxygen gas as calculated and delivered from full cylinder pressure of 1850 psig at 70°F to 14.7 psig at 70°F

△
2 Weight based on cylinder minimum or maximum weight fully charged with oxygen to 1850 psig at 70°F

△
3 Regulator with Altitude Compensated regulation attached. Flow and outlet pressure varies with altitude as per table based on inlet supply pressure of 100 -135 psig

△
4 Total system weight = Weight of regulator + charged weight of cylinder maximum + weight of (2) protective bands

TO ORDER THE COMPLETE 895 SERIES CYLINDER AND HANDKNOB REGULATOR ASSEMBLIES, COMPLETE THE BUILDING BLOCK NUMBERS.



BASIC SERIES NUMBER 895 –

Regulator Assembly						Cylinder Finish (Paint)		Composite Lightweight Cylinder																														
No.	Outlet Press. Range (PSIG)	Inlet Press. Range (PSIG)	Regulated Flow Range (LPM)	Part Number	$\triangle_4$ Wt. (Lbs.)	No.	Description	No.	Cyl. Cap. $\triangle_1$ (Cu. Ft.)	Part Number	Dim. A (In.)	Dim. B (In.)	Weight (Lbs.) Min.	$\triangle_2$ $\triangle_4$ Max.	Elastic Protective Band																							
															Part Number	Wt.(lbs.) $\triangle_4$																						
30	-	-	-	None	-	0	Green No. 14187 Fed Std - 595 Polyurethane Coating	22	22.8	21507-01	24.21	5.1	5.19	5.89	31062-022	.17																						
31	80-55	250-1850	5-200	803213-11	2.20			40	40.0	21507-05	24.71	6.7	8.82	10.12	31062-050	.19																						
32	-	-	-	-	-			50	50.1	21507-02	29.31	6.7	10.87	12.07	31062-050	.19																						
33	80-55	250-1850	5-200	803214-11	2.01			77	77.1	21507-03	33.91	7.5	17.81	19.31	31062-077	.22																						
34	80-55	250-1850	5-200	803214-12	2.26			15	115.7	21507-04	35.91	8.9	26.22	28.22	31062-115	.24																						
35	80-55	250-1850	5-200	803213-12	2.26	Regulator with Altitude Compensated Regulation Attached <table><tr><th rowspan="2">Altitude (Feet)</th><th colspan="2">Flow Cap. (LPM-NTPD)</th><th rowspan="2">Regulated Outlet Pressure (PSIA) $\triangle_3$</th></tr><tr><th>Low</th><th>High</th></tr><tr><td>8,000</td><td>15.0</td><td>15.0</td><td>24.1 - 32.1</td></tr><tr><td>12,500</td><td>18.0</td><td>24.0</td><td>32.3 - 39.8</td></tr><tr><td>20,000</td><td>40.0</td><td>48.0</td><td>49.2 - 58.7</td></tr><tr><td>35,000</td><td>76.0</td><td>85.0</td><td>72.8 - 84.8</td></tr></table>											Altitude (Feet)	Flow Cap. (LPM-NTPD)		Regulated Outlet Pressure (PSIA) $\triangle_3$	Low	High	8,000	15.0	15.0	24.1 - 32.1	12,500	18.0	24.0	32.3 - 39.8	20,000	40.0	48.0	49.2 - 58.7	35,000	76.0	85.0	72.8 - 84.8
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36	80-55	250-1850	5-200	803213-13	2.26																																	
37	68-42	200-1850	2-70	803213-15	2.20																																	
38	-	-	-	-	-																																	
39	68-42	200-1850	2-70	803214-13	2.26																																	
40	-	-	-	-	-																																	
41	80-55	250-1850	5-200	803213-14	2.25																																	
48	80-55	250-1850	5-200	803213-16	2.63																																	
49	80-55	250-1850	5-200	803213-17	2.20																																	
51	80-55	250-1850	5-200	803213-18	2.32																																	

$\triangle_1$ Volume of oxygen gas as calculated and delivered from full cylinder pressure of 1850 psig at 70°F to 14.7 psig at 70°F

$\triangle_2$ Weight based on cylinder minimum or maximum weight fully charged with oxygen to 1850 psig at 70°F

$\triangle_3$ Regulator with Altitude Compensated regulation attached. Flow and outlet pressure varies with altitude as per table based on inlet supply pressure of 100 -135 psig

$\triangle_4$ Total system weight = Weight of regulator + charged weight of cylinder maximum + weight of (2) protective bands

Specifications		
Materials		Performance
Cylinder	Regulator Assembly	Temperature Range
- Aluminum Alloy (6061T6) - Filament Overlap: Kevlar 49 / Epoxy Resin - Certification: CTC / DOT E-8162-1850 (OR)-1900 CTC / DOT E-8391-1850 (OR)-1900	- Body: Brass (QQ-B-626 Alloy No.360 1/2 Hard, Chrome Plated) - Housing: Aluminum Alloy 2024-T4 - Metal Boss Seal: 300 Series Corrosion Resistant Steel 1/8 ANPT Ports: For Connecting Fittings - Regulator to Cylinder mounting thread size: .750-16 UNF-2A	- Storage: -45°F (-43°C) to +160°F (+71°C) - Operating: -25°F (-32°C) to +160°F (+71°C) - High Pressure Relief: 2775 psig - Low Pressure Relief: 90 psig, except 803216 Series (160 psig). Regulator vents low-pressure system to ambient in OFF positions except for -23 and -24 regulator configurations which do not vent in the OFF position. - Service Pressure: 1850 psig at 70°F